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with which our recognized "subjects" deal. As I conceive it, this problem is contained in the question: "How has man, with all the infinite variety of his activities in literature, art, thought, and handicraft come to be as we find him throughout the world to-day?" But it also means that we require a method in common—the method of science, which may for the humanist be found illustrated in the historical study of language.

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"SCIENTIFIC PREPOSSESSION" AND ANTISCIENTIFIC ANIMUS

PROFESSOR FITE'S clever caricature of scientific psychology, in the December *Atlantic*, like all clever caricature, achieves its end by seizing on a few conspicuous features of its victim; features not necessarily of vital importance; and by skilful exaggeration and subtle misrepresentation of these features, entirely obscuring the victim's real characteristics.

Against such caricaturing it is useless to argue, and undignified to protest. Where the motive is kindly, it is best to laugh with the artist. Where the motive is spiteful, serene indifference is sufficient protection. There is no reason to be concerned over Professor Fite's playing up of the "behaviorism" of a few radicals as if it were the real current of psychological opinion and method. We need not become excited when our caricaturist assumes for his own purposes that the Freudian pseudo-psychology, with its mystical Subconscious and medieval demons of complexes, is accepted by the laborious scientific psychology, slave to dull fact and grinding method, which he scornfully describes in another page. Even when, after telling us that "no one thinks of demanding . . . from the 'expert psychologist' . . . a broad and sympathetic appreciation of literature, a cultivated and instructed taste, and, above all, a thoughtful experience of life," he proceeds, without a verbal blush, to quote from "a recent writer" who is actually one of our best known American psychologists, and who has in a very high degree just this appreciation, taste, and experience: proceeds, indeed, to quote from this "recent writer's" delightful satire on experimental psychology: even then we should merely admire the philosopher's adroitness in juggling with facts. There would be reason for concern if it were probable that the cartoonist believed his caricature to be a veracious portrait; but one hesitates to assume such naïveté of Professor Fite, just as one would hesitate to assume it of Goldberg or one of the other cartoonists of the evening papers.

Professor Fite's presentation of Psychology is, however, not all caricature. The feature which he evidently finds most objectionable is a true and essential feature, although somewhat unfairly represented. It is the uncompromising insistence on *scientific proof*, as against conjecture, popular report, and anecdote, which galls, not only occasional philosophers, but galls also a vast company of mystics, spiritualists, Freudians, Christian scientists, character analysts, and worshipers at the shrine of the thinking horses. Misery makes strange bedfellows, and the misery of those whose spirits rebel at treading the hard road of scientific procedure makes the strangest dream-mates of all. Let us quote from our critic's words:

Psychological Laboratories have been in operation for thirty years or more; and for more than twenty years I have been searching for one fact worthy of consideration—for one "discovery," so to speak, as measured by what they call a discovery in other sciences—for one fact discovered in the psychological laboratory which did not repeat what we already knew, or which required a laboratory for its discovery.

Several years ago I thought I had found a little one. A distinguished psychologist, in a public lecture which I attended, was explaining the value of the psychological laboratory. We all know, he said, that imagination may be mistaken for reality, but it required the laboratory to show with scientific certainty that reality could be mistaken for imagination. I can give only a rough outline of the experiment reported. The subject is seated facing a screen of ground glass, behind which, unknown to him, there is a projection-lantern, and in the middle of which, if I remember correctly, there is drawn a circle of a few inches in diameter. He is told to look at the circle and to imagine that it is red. Presently the area of the circle begins to be tinged with red; and since he is unaware of the fact that a projection-lantern is being operated behind the screen, he takes this reddish tinge to be the product of his imagination. Thus we prove, by scientific method, that reality may be mistaken for imagination.

I will admit that, as I walked home after the lecture, I felt that I had received a demonstration. The "discovery" was not precisely awe-inspiring, but did it not amount to a vindication of scientific method? How could one have unearthed such a fact except in a laboratory? Then I suddenly remembered. A few evenings before, it had happened that my wife, who was sitting in my study reading, had laid down her book, assumed an attitude of listening, and then, taking up her book again, had remarked to me with a smile that she was so accustomed to listening for the baby's cry that she often heard him cry in imagination when in fact he was quiet. Whereupon, having imagined the same thing myself, and doubting that we could both be victims of imagination, I opened the door and discovered that the infant was really crying. Here then it was demonstrated, in the heart of the household, with no apparatus except a baby, yet with all the scientific rigor that one could reasonably desire, that reality may be mistaken for imagination.

To those who have studied the "proofs" of spirit communication, levitation and materialization; who have waded through the older animal psychology and the early monographs on child study;

and who have patiently analyzed the documents of the Freudian propaganda, Professor Fite's naïve reactionary method of accumulating data is distressingly familiar. It is such a simple, easy, method! Any one can use it, and—most gratifying of all—can prove by means of it exactly what he wants to believe.

Professor Fite would prove a presumably important fact of the relation of perception to imagination by an anecdote: by an observation he believes he made in the immediate or remote past. Sir Oliver Lodge would prove the possibility of communicating with the dead by certain incidents which he believes came under his observation. Professor Barrett, in the same way, would demonstrate the marvelous efficiency of the divining rod. Christian scientists of undoubtable sincerity relate anecdotes of the uniting of broken bones through the reading over the patient of a few pages of Mrs. Eddy's Book. Various observers of animals have constructed entertaining theories of the "animal mind" on the basis of anecdotes vouched for by reliable persons. And all these apostles of the Easy Way protest that it is silly to insist on scientific demonstration of the phenomena they declare they have observed by merely "keeping the eyes of the mind open," as Professor Fite so neatly puts it.

Against this flood of superstition, which has, from the remote past, beaten upon our slowly emerging civilization, there is no strong bulwark except the *scientific method* which the mystics would so lightly sweep aside. We may admit that many psychological beliefs which are popularly held are correct, although not scientifically verified. Many other beliefs are false. What shall decide between the true and the false? Are we to assume the theories we like, and deny those we dislike? It is here that scientific method is indispensable.

Scientific method, as it applies to the experimental sciences, and specifically as it applies to experimental psychology, is very well illustrated by Professor Fite's story. Scientific method does not accept the mere statement of what is believed to have happened. It demands an arrangement of the conditions such that there is reasonable freedom from doubt that what is reported is what really occurred. Most important of all, it requires the statement of conditions under which the observation can be deliberately repeated. Neither of these demands can be fulfilled absolutely, but their fulfillment must be approximated. Mistakes are constantly being made in spite of the method, yet by repetition these mistakes are corrected.

Professor Fite's observation is of the class to which belong the anecdotes which "prove" the occurrence of telepathy. The factor of coincidence is not eliminated. It might be that the crying of the babe was really heard: it might be that it was only imagined. The

fact that the babe was actually crying at the time is no proof that it was heard. What really lends plausibility to the inference is the scientific demonstration of its possibility. The experiment of the "distinguished psychologist" is far more conclusive, and since it can be repeated by any competent experimental psychologist, and the conditions even more carefully checked, it is the initial step in proof. If any importance attaches to the alleged fact that perception can be taken for imagination, its psychological demonstration is indispensable, in spite of a thousand unchecked inferences from the daily life of philosophers and others.

This fundamental need for scientific method is something that mystics and apostles of the occult find it very difficult to grasp. Writers on spiritistic phenomena are constantly deploring the skepticism of scientists, and branding it as unreasonable. Why, they ask us, do we refuse to accept the circumstantial anecdotes of phenomena transcending the known laws of nature? Was not the acceptance of radioactivity as revolutionary as would be the acceptance of levitation or telepathy? They do not understand that the existence of radium would never have been accepted on the mere statement of the Curies, or on the statements of a dozen scientists. Nor do they understand that any phenomenon, however occult it seems now, would be admitted at once, if it were demonstrable through the indispensable method of scientific procedure, as was the existence of radium.

When one considers the important contributions which psychology has made, not only to pure knowledge, but also to applied sciences, one wonders where Professor Fite has been searching "for more than twenty years" with so little result. (It would be cruel to inquire what striking discoveries have been made by him and other philosophers in the same period.) For the guidance of those critics who really wish to see a sample of what the scientific method in psychology accomplishes, we suggest that they watch for the reports which will presently appear on psychological work in the various branches of the army and navy. Here will be found a brilliant record of the practical accomplishments of psychologists, most of whom were taken directly from their laboratories, and faced with the necessity of solving practical problems in short order. Remarkable as the accomplishments were, they would have been even greater if it had not been for the inhibitions of unscientific men in positions of authority, who, like Professor Fite, preferred guesswork to scientific certainty.

Because of the successful practical application of the results of psychological research, in education, business, medicine, and many other departments of activity; and especially because of the impulse

given to applied psychology by the war, there is indeed danger that the pure research of which Professor Fite speaks contemptuously—research conducted for the purpose of ascertaining facts regardless of application, which is the primal flame from which alone the fires of applied science are lighted—will be dangerously neglected. In the past the greatest obstacle to successful application has been the urgent demand therefor, which has led to the premature use of principles, and has opened a field to a company of fakirs—character analysts and self-made “experts”—who have tended to discredit scientific work. Unless more adequate provision is made for pure research in experimental psychology, the progress of applied psychology in the future will be much retarded. One of the greatest benefits which could be conferred upon the nation at the present moment would be the foundation of an institute for psychobiological research on a scale comparable to that of the Rockefeller Institute and other institutes for applied science.

Rich as is the field for psychological research, and important as are its applications, the results must ever be disappointing to those who expect thrills, and “discoveries, so to speak, as measured by what they call a discovery in other sciences.” Psychology deals with the mind: yes, psychologists still claim that: and with the physical and physiological phenomena which are closely connected with mind. Mind is the common possession of the human race, at least, and there is no reason to assume the existence of any mental properties or processes so hidden from the innumerable possessors of mind that if discovered they would be such novelties as were Hertzian waves and radium to physical science. In fact, an important part of the work of scientific psychology is to demolish the thrilling “discoveries” of amateur psychologists—such “discoveries” as subconscious “complexes,” telepathic communication, and dogs with super-canine intelligence.

Psychological research finds its work less in extending the field of knowledge than in bringing order out of the chaos within the field, a duty in no wise less important than the other, but more laborious, and lacking in appeal to the poetic imagination. Psychology will always be disappointingly dull to those who have not the “scientific prepossession,” the “prepossession” that no labor is too hard, no course too long, if it lends to the ascertainment of truth.

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